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Get aware of hand hygiene: Implement it in your attitude

Gitali Bhagawati

Abstract:

BACKGROUND: Although there is advancement in the health-care system, the rates of hospital-acquired infections (HAIs) are still high. Poor hand hygiene (HH) among healthcare workers (HCWs) is identified as one of the major causes of HAIs.

AIMS: The aim and objective of this study is to assess the awareness and attitude regarding hand hygiene (HH) among HCWs in a superspecialty hospital in Ghaziabad, Uttar Pradesh, India.

SETTINGS AND DESIGN: A cross-sectional, semi-structured, questionnaire-based study was carried out in a superspecialty hospital, Uttar Pradesh, India. Questionnaires were distributed on the training session of HH organized in the eve of World HH Day on May 5th, 2016.

SUBJECTS AND METHODS: A total 104 questionnaires were distributed among various HCWs. Each questionnaire was composed of 14 questions to test the awareness and attitude regarding HH. Awareness regarding HH among HCWs was graded as excellent (>80% correct response), satisfactory (80%–50%), and unsatisfactory (<50%). Attitude was graded on the basis of their response: excellent (strongly agree), satisfactory (agree), and unsatisfactory (other response).

RESULTS: Awareness was found to be unsatisfactory regarding the most frequent source of germs in hospital setting (39.42%) and effective time of proper hand rub (42.30%). Lack of awareness regarding adequate time of hand wash among doctors (85.71%) was an important issue.

Keywords:

Hand hygiene, healthcare worker, hospital-acquired infection

Introduction

Although there is advancement in the health-care system, the rates of hospital-acquired infections (HAIs) are still high. In developed countries, HAIs affect 5%–15% of the hospitalized patients,^[1] while its prevalence in developing countries is about 19%.^[2] Poor hand hygiene (HH) among healthcare workers (HCWs) is identified as one of the major causes of HAIs.^[1] Organisms are capable of surviving on HCWs' hands for at least several minutes following contamination, and if HH practices are suboptimal, microbial colonization is more easily established.^[3] Thus, most HAIs are transmitted by HCWs' hands through

direct or indirect contact.^[1] In the wake of the growing burden of HAIs by the multidrug-resistant pathogens, HCWs are reversing back to the basics of infection preventions by simple measures such as HH as because enough scientific evidence suggests that HH alone can significantly reduce the risk of cross-infections.^[4] Although Semmelweis demonstrated more than a century ago that only hand washing was sufficient in reducing the incidence of HAIs, the compliance toward hand washing practices remains low.^[5]

HH is one of the five key initiatives set out by the World Alliance for Global Patient Safety Challenges.^[6] With "Clean Care is Safer Care" as a prime agenda of the global initiative of the WHO on patient safety programs, it is time for developing countries to formulate the much-needed policies

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Department of
Microbiology, Dharamshila
Narayana Superspeciality
Hospital, Vasundhara
Enclave, New Delhi, India

Address for correspondence:

Dr. Gitali Bhagawati,
Flat No. 1205, Migsun
Homz, Kaushambi,
Behind Radisson Blu
Hotel, Ghaziabad,
Uttar Pradesh, India.
E-mail: [gitalibhagawati32@
gmail.com](mailto:gitalibhagawati32@gmail.com)

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for the implementation of basic infection prevention practices in healthcare setups.^[4]

Aim and objective

The aim and objective of this study is to assess the awareness and attitude regarding HH among HCWs in a superspecialty hospital in Ghaziabad, Uttar Pradesh, so that actions can be taken for the improvement of their compliance.

Subjects and Methods

A cross-sectional, indirect interview type study was conducted in a 200-bedded superspecialty hospital in Ghaziabad over a period of 3 days, 2nd–4th May 2016, on the eve of World HH Day (May 5th, 2016). The self-distributed, pretested, semi-structured questionnaires were distributed among the HCWs who had come for the training session. HCWs included in this study were doctors, nurses, and technicians of various departments. Each questionnaire was composed of two sections: Section A comprised demographic profile and Section B comprised questions to test the awareness and attitude regarding HH.

Results

A total 104 questionnaires were distributed among HCWs; all of them were received back (100%). Of 104 participants, 23 were male (22.11%) and the rest (81, 77.88%) were female. The respondents were doctors (7, 6.73%), nurses (65, 62.5%), and technicians (32, 30.77%). Each participant was given 15 min to fill-up the questionnaire. According to designation, participants included in the study were consultants (1%), intensivists (1%), resident medical officers (5%), sister incharges (3.84%), staff nurses (58.65%), laboratory technicians (23%), blood bank technicians (3.84%), radiology technicians (2%), and dialysis technicians (2%) [Figure 1]. Awareness regarding HH among HCWs was graded as excellent (>80% correct response), satisfactory (50%–80% correct response), and unsatisfactory (<50% correct response). Attitude was graded on the basis of their response: excellent (strongly agree), satisfactory (agree), and unsatisfactory (disagree,

strongly disagree, no idea, and no response). In this study, majority of the HCWs involved were staff nurses (58%) followed by laboratory technicians (23%) [Figure 1].

Majority (75%) of the respondents had total work experience <5 years, 20% had work experience in between 5 and 10 years, and only 5% had work experience >10 years. Formal training on HH was taken by 82 (79%) of the participants in the last 1-year period.

Awareness was unsatisfactory (<50% correct response) regarding the most frequent source of germs in a hospital causing HAI (39.42%), effective time of proper hand rub (42.30%), and reduction rate of HAI by HH (48%). Excellent awareness (>80% correct response) was found regarding the role of HH in prevention of HAI (90.38%) [Figure 2].

Among the HCWs, unsatisfactory attitude was found to be maximum (26%) in response such as feeling angry when HH was not carried out by others. Excellent attitude (73%) was found by accepting HH in their professional culture and response for blaming themselves if they omit HH (64.42%) [Table 1].

Lack of awareness regarding the most frequent source of germs in a hospital among doctors and nurses was 71.43% and 67.69%, respectively. Inadequate hand wash time is another important issue of awareness among doctors (85.71%) while inadequate hand rub time was the main concern among nurses (64.61%) as well as technicians (53.13%). Among the technicians, 68.75% responded incorrectly regarding the rate of reduction of HAI by HH while it is 44.61% among nurses [Table 2].

Among HCWs, 42.86% of the doctors do not want to blame themselves for infections if they omit HH and 46.87% of the technicians do not feel angry if HH is not carried out by others in HCF. Excellent response was found in taking HH as professional culture among all the groups: doctors (100%), nurses (66.15%), and technicians (81.25%) [Table 3].

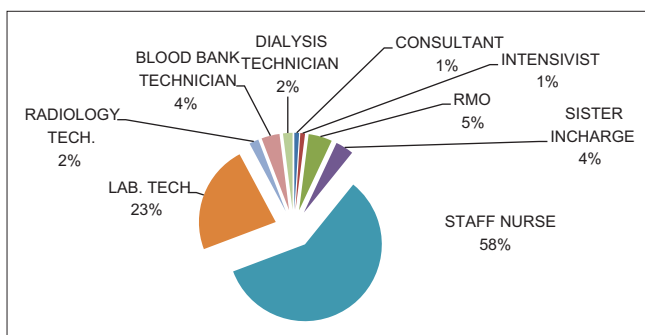


Figure 1: Distribution of healthcare workers involved in the study

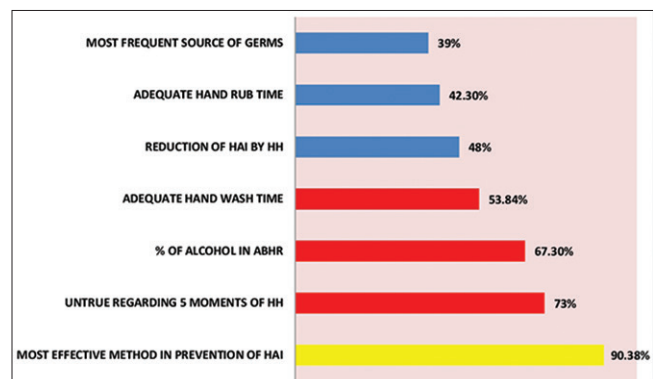


Figure 2: Awareness regarding hand hygiene among healthcare workers

Table 1: Attitude regarding hand hygiene among all healthcare workers

Grading	Response as per questionnaires	HH is professional culture	Feel angry when HH is not carried out by others	Feel guilty if I omit HH	I would blame myself for infections if I omit HH
Excellent	Strongly agree	76	25	25	67
Satisfactory	Agree	27	52	55	26
Unsatisfactory	Disagree	0	16	8	1
	Strongly disagree	1	3	7	3
	No idea	0	6	4	2
	Not attempted	0	2	5	5

HH=Hand hygiene

Table 2: Distribution of health care workers with respect to their awareness regarding hand hygiene

HCW	Response	Most frequent source of germs, n (%)	Most effective method in prevention of HAI, n (%)	Untrue regarding 5-moments of HH, n (%)	Adequate hand wash takes time, n (%)	Adequate hand rub takes time, n (%)	Disinfectant, n (%)	Reduction of HAI by HH, n (%)
Doctors (7)	Correct	2 (28.57)	7 (100)	6 (85.71)	1 (14.28)	5 (71.43)	7 (100)	6 (85.71)
	Incorrect	5 (71.43)	0	1 (14.28)	6 (85.71)	2 (28.57)	0	1 (14.28)
Nurses (65)	Correct	21 (32.31)	64 (98.46)	55 (84.61)	34 (52.30)	23 (35.38)	40 (61.54)	36 (55.38)
	Incorrect	44 (67.69)	1 (1.54)	10 (15.38)	31 (47.69)	42 (64.61)	25 (38.46)	29 (44.61)
Technicians (32)	Correct	19 (59.37)	25 (78.12)	21 (65.62)	22 (68.75)	15 (46.87)	25 (78.12)	10 (31.25)
	Incorrect	13 (40.62)	7 (21.87)	11 (34.37)	10 (31.25)	17 (53.13)	7 (21.87)	22 (68.75)

HAI=Hospital-acquired infection, HH=Hand hygiene, HCW=Healthcare worker



Figure 3: Poster presentations from various departments of the hospital

Discussion

This study was carried out to know the awareness and attitude of HCWs in a tertiary care hospital in Ghaziabad,

Uttar Pradesh. Although 75% of the respondents had total work experience of <5 years, due to the ongoing training programs on HH that was received by 79% of them in the last 1 year, the awareness and attitude was found to be satisfactory in most of the cases [Figure 3].

Awareness was found to be excellent (>80% correct response) among doctors, but most of the satisfactory attitude (80%–50%) regarding HH was found among the nurses. Similar findings had been observed in other studies.^[5,6] Among the technicians, although awareness was found to be satisfactory, it was not same with their attitude. This may be because of their less participation in the training programs and newly joined staff in the institute.

In our study, 53.84% of the HCWs had awareness regarding the timing of proper hand wash which is similar to the study of Ekwere and Okafor (67%)^[1] and dissimilar to the finding of Nabavi *et al.* (12.1%).^[7] Overall response regarding adequate timing for the use of alcohol-based hand rub was unsatisfactory (<50%); among the HCWs, only doctors had satisfactory response (71.43%). This is in contrast to the finding of Ansari *et al.* (42.9%).^[6]

Our study reveals only 39.42% awareness among HCWs regarding the most frequent source of germs in a hospital setting, which is a contrast to the finding of Ekwere and Okafor (67%).^[1] Significant differences of 45% and 27.5%^[8] were observed regarding awareness of the most frequent source of germs responsible for HAIs among resident doctors and nurses, respectively, which is dissimilar to

Table 3: Distribution of healthcare workers with respect to their attitude regarding hand hygiene

HCW	Response	Attitude regarding HH			
		HH is professional culture, n (%)	Feel angry when HH is not carried out by others, n (%)	Feel guilty if I omit HH, n (%)	I would blame myself for infections if I omit HH, n (%)
Doctors (7)	Excellent	7 (100)	3 (42.86)	4 (57.14)	3 (42.86)
	Satisfactory	0	3 (42.86)	2 (28.57)	1 (14.28)
	Unsatisfactory	0	1 (14.28)	1 (14.28)	3 (42.86)
Nurses (65)	Excellent	43 (66.15)	10 (15.38)	13 (20)	14 (21.54)
	Satisfactory	21 (32.31)	43 (66.15)	42 (64.61)	50 (77)
	Unsatisfactory	1 (1.54)	12 (18.46)	10 (15.38)	1 (1.54)
Technicians (32)	Excellent	26 (81.25)	11 (34.37)	10 (31.25)	8 (25)
	Satisfactory	6 (18.75)	6 (18.75)	12 (37.50)	19 (59.37)
	Unsatisfactory	0	15 (46.87)	10 (31.25)	5 (15.62)

HH=Hand hygiene, HCW=Healthcare worker

our finding (doctors, 28.57% and nurses, 32.31%). Overall response regarding the reduction of HAI rate by HH was 48% in our study which is almost similar to the finding of Ekwere and Okafor (36%).^[1]

In our study, 57.14% doctors showed excellent response and 64.61% nurses showed satisfactory response as they felt guilty while omitting HH; this attitude was found to be less satisfactory among technicians. This is similar to the finding of Ariyaratne *et al.* (medical students: 39% and nurses: 69%).^[2]

In the present study, I conclude that although awareness regarding HH was found to be excellent as well as satisfactory in most of the cases, the attitude was lacking behind among hospital staff toward HH. To change the attitude is really a challenging task not only among other healthcare staff but also among the doctors. Despite continuous training programs, both induction and in-service, HH has not been in their attitude. I conclude that high compliance cannot be achieved only by doing training on it. To implement the awareness in their attitude, continuous motivation of the staff is necessary. For this, we celebrated HH week on the occasion of world HH day on May 5th, 2016. On this occasion, questionnaires were distributed among all HCWs along with training on 4 successive days; HH poster presentation and HH quiz competition were also organized. An overwhelming response was seen from all the departments of the hospital. Although participation of doctors was less (only 6.73%) in the training sessions, their full participation was highly appreciated in other activities. Moreover, best HH performer award was distributed among the various categories of HCWs: doctors, nurses, general duty attendant, and dresser based on the HH compliance rate over 6 months.

Limitation of the study

The effect of celebration of HH week could not be assessed in this article.

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Conflicts of interest

There are no conflicts of interest.

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Questionnaires

Please: Answer all questions. Tick best choice (only one choice). Your identity and answers will be kept confidential

Section A: Biographic Data

1. Designation
2. Department
3. Date
4. Period of working experience
(a) Less than 5 years (b) 5 to 10 years (c) more than 10 years

Section B

1. Hand hygiene is part of my professional culture
 1. Strongly agree
 2. Agree
 3. Disagree
 4. Strongly disagree
 5. No idea

2. Sometimes I miss out hand hygiene simply because I forget it
 - A. Strongly agree
 - B. Agree
 - C. Disagree
 - D. Strongly disagree
 - E. No idea

3. I feel angry if hand hygiene is not carried out by others
 - A. Strongly agree
 - B. Agree
 - C. Disagree
 - D. Strongly disagree
 - E. No idea

4. I feel guilty if I omit hand hygiene
 - A. Strongly agree
 - B. Agree
 - C. Disagree
 - D. Strongly disagree
 - E. No idea

5. If I omitted hand hygiene, I would blame myself for infections
 - A. Strongly agree
 - B. agree
 - C. Disagree
 - D. Strongly disagree
 - E. No idea

6. Did you receive formal training in hand hygiene in the last 1 year?
 Yes No

7. Do you routinely use an alcohol-based hand rub for hand hygiene?
 Yes No

8. What is the most frequent source of germs responsible for healthcare-associated infection?
 - a. Hospital air
 - b. Hospital's water system
 - c. Germs already present on or within the patient
 - d. Hospital environment

9. Single most effective method in prevention of hospital-acquired infection is –
 - a. Wearing gloves
 - b. Hand hygiene
 - c. Use of antibiotics
 - d. Patient isolation

10. All are true regarding 5 moments of hand hygiene (WHO) except
 - a. Before touching a patient
 - b. After touching a patient
 - c. After hand wash do hand rub
 - d. Before aseptic precaution
 - e. After body fluid exposure risk
 - f. After touching patient's surroundings

11. Adequate hand wash takes
 - a. 5–10 s
 - b. 20–30 s
 - c. 40–60 s
 - d. 2 min

12. Adequate hand rub takes
 - a. 5–10 s
 - b. 20–30 s
 - c. 40–60 s
 - d. 2 min

13. Most effective disinfectant for hand hygiene is
 - a. Alcohol-based hand rub (70%–90% alcohol)
 - b. Alcohol-based hand rub (10%–20% alcohol)
 - c. Antimicrobial hand wash (4% Chlorhexidine)
 - d. Plain soap

14. Proper use of alcohol-based hand rubs can reduce the nosocomial infection rate by
 - a. Approximately 5%
 - b. Approximately 10%
 - c. Approximately 20%
 - d. Approximately 40%

Thank you very much for your participation